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E-Commerce Tools -- Picks, Clicks and Shopping Carts -- Our first e-commerce lab test looks at three products ready to help you make the brick-to-click conversion

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Abstract (Document Summary)

Brick-to-click migration is happening daily, as more and more companies look to expand their buying audience and sales bases. However, click-and-mortar transitions are not without risk, and they do present a whole new set of problems that must be addressed. Three products to help with the brick-to-click conversion were lab tested: 1. AbleCommerce 3.03 from Able Solutions, 2. Microsoft Commerce Server 2000 from Microsoft, and 3. WebSphere Commerce Suite Professional Developer Edition 5.1 from IBM. All three products are more than capable of handling any size Web store with room to spare, and share a large number of similar qualities. By far the most expensive suite tested, IBM's WebSphere Commerce Suite Professional Developer Edition came out on top.

Full Text (4362 words)







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While many dotcom start-ups didn't make it through the start of the new millennium, that doesn't mean you shouldn't consider taking your brick-and-mortar store online. This brick-to-click migration is happening daily, as more and more companies look to expand their buying audience and sales base.


Making your existing business model work on the Internet is not a matter of simply dumping a product catalog into a database, creating a couple of glitzy Web pages and hoping that people will place an order through your site. It takes organization, technical savvy and planning.

Your goal with your click-and-mortar Web store is to sell products. Whether your products are CDs or women's shoes, you can list them by category, color and size; provide a picture and description; and open up your sales to geographic regions you never would have reached in the traditional physical realm. However, click- and-mortar transitions are not without risk, and they do present a whole new set of problems that must be addressed.

E-Commerce Players

For our first e-commerce lab test we invited vendors such as Able Solutions, BEA, BroadVision, IBM, iPlanet, Microsoft, OpenMarket and Oracle to provide submissions for our brick-to-click conversion. Only Able Solutions, IBM and Microsoft accepted our invitation.

We received AbleCommerce 3.03 from Able Solutions, Microsoft Commerce Server 2000 from Microsoft and WebSphere Commerce Suite Professional Developer Edition 5.1 from IBM. All three products are more than capable of handling any size Web store with room to spare, and share a large number of similar qualities. Where they differ is in bells and whistles and, more important, price.

We found that even though it was by far the most expensive suite we tested, IBM's WebSphere Commerce Suite Professional Developer Edition came out on top.

Virtual Shoppers

For the most part, real-time interaction is not available in today's e-market. You have to rely on your Web site's design and layout to entice the buyer to browse through your displays and help them locate the items they want to purchase. Logically arranged categories and usable search engines will help your customers find what they are looking for in the shortest amount of time. If they have to scratch and dig for what they want, you run the risk of their losing patience and clicking away.

Customer service is one of the biggest differentiators in business, and it is even more important on the Web. Make your contact information readily available. Don't hide your telephone number eight levels down in small text. Plainly state your return policies and stick to them. Answer e-mail inquiries. Make it as easy for customers to do business with you digitally as it is physically.

The catalog sales model fits well with e-commerce. Catalog-style product groupings and layout help present your products in a familiar format with a minimum of effort. Make use of thumbnail images and extended descriptions to give your buyer as much information as you can.

No matter how you assemble your Web storefront, security should be your first and foremost concern. You want to assure your buyers that their personal data is not going to be compromised either from the outside or from the inside. Your databases should have as much security built into them as you can afford. Encrypt credit card and other payment information in the database to help prevent unauthorized snooping.

It goes without saying that your private network should be protected from the rest of the world by high-quality firewalls. High-availability/fault-tolerant firewalls help prevent site outages, and load balancers can help keep performance up to par. Also, intrusion detection software provides a way both to find strange activity and log it for future analysis. This is no place to cut corners.

SSL is a great way to protect buyers' information while they process their shopping cart. But keep in mind that sites with high volumes of traffic can come to an absolute standstill if all the SSL encryption is done at the server level. Place SSL appliances strategically in front of your commerce servers-not the entire site- to off-load the SSL processing overhead and increase overall throughput.



Software Is The Store

When you put up your online store, don't lock yourself into a solution that has no way up. Make sure the package you select is based on open standards, like Java, ODBC (Open DataBase Connectivity), HTML and XML. You want




to be able to customize the store's Web pages so that they reflect the rest of your Web site's look and feel.

Also, now that you have broken down geographical barriers, it is time to quit thinking "English only." Multicultural/multilingual capabilities are a must for any successful e-commerce site. And don't forget about foreign currency. Traffic reporting and trend analysis are another important part of your site. Knowing who, what and where your customers are coming from, buying and, more important, not buying will affect how you structure your site and present your goods.

AbleCommerce 3.03

AbleCommerce from Able Solutions does a pretty good job of looking like David to  IBM's and  Microsoft's Goliath. This is a complete e-commerce solution bundled into a tightly knit package that works with most major Web server platforms. Built around Allaire's ColdFusion application server, Able-Commerce comes with tools that not only get you online quickly, but also help you maintain your site.

Priced at \$2,995 for a single store, AbleCommerce is by far the lowest-cost product in our roundup. Even with the addition of ColdFusion (list price from Able Solutions at \$3,995), it still comes in under Commerce Server 2000 and SQL Server 2000-and does not even come close to WebSphere Commerce Server.

Far more forgiving than Commerce Server, AbleCommerce will work with  Microsoft's Internet Information Server and Personal Web Server as well as other non- Microsoft Web server platforms, including Apache and Netscape FastTrack. Also, your server operating system of choice may be Windows NT Server 4.0, Windows 2000 or even  Red Hat 6.0. AbleCommerce is built around DHTML and takes full advantage of Java, Java Beans, Enterprise Java Beans and ActiveX.

Installation is straightforward and presented no surprises. Because we did not have a ColdFusion server on our system, the setup routine prompted us to install it as a prerequisite to installing AbleCommerce. By default, AbleCommerce stores all of its data in Access databases. For sites that need additional scalability or capacity, it can also store data in an SQL database. All told, installation took less than 30 minutes.

One of the few areas where the application comes up short is in working with inventory or products in an existing database. You cannot natively import product information into AbleCommerce without the use of a third-party tool.

Inventory control is good but does not go much beyond the basics. You can have up to three levels of product listings and can, on an item-by-item basis, hide or display each product. You can set reorder limits for products and have the system automatically e-mail the supplier when the level is reached.

All site administration is done through your browser, using the ubiquitous wizard format. As with the other products, because of the nature of the app, getting your system up the first time takes a little forethought and planning. While we did have the advantage of having a technical support representative with us, we were able to get a basic storefront up and available in less than two hours. We found the manager interface easy to navigate and use.



AbleCommerce is nothing if not customizable. Just about every HTML page in AbleCommerce is made up of headers, footers and the like. You can edit each page independently to reflect your site's look and feel. The best part is there are wizards and built in HTML editors in AbleCommerce to help you get it done. By creating styles, you assign different fonts, colors and page properties for a single page or for the entire site. With just a few simple clicks, we were able to completely change the colors and layout on the product display page.


Order processing is one of AbleCommerce's strongest features. Through partnerships with leading payment services, such as Authorize.Net, CyberCash, IC Verify, LinkPoint, Planet Payment and SkipJack, as well as  VISA,  MasterCard,  American Express and Discover, AbleCommerce can easily fit into your existing payment system. Like the other vendors, AbleCommerce uses SSL encryption to protect your customers' data while their online orders are finalized. It does not include SSL certificate support in the base program, but rather relies on either the underlying operating system or other network appliance for this support.


Tax and shipping support is another well-represented area. You can define multiple levels of taxation-based on country, state or province, and city-to handle all tax collection requirements. You can base shipping charges on flat rate, weight and percentage of price, among others. AbleShipper, a UPS shipping calculator, is included for more accurate rates. Unfortunately, you have to manually update the UPS rate tables. Able Commerce is multilingual-and multicurrency- ready, although not to the point that WebSphere Commerce Server is.

As with the Commerce Server, you can assign members pricing levels as well as discounts and specials. You can also define "cross-sell" items based on related products. A cool feature new to AbleCommerce 3.03 is "kiting." This lets you define one product as a kit and assign other products to it as part of the kit. For example, you have a table with two chairs as a kit. The buyer can add chairs to the kit, and AbleCommerce handles all inventory, pricing and shipping accordingly.

Microsoft Commerce Server 2000

Also capable of handling both B2C and B2B sites, Commerce Server 2000 is the latest generation of e-commerce platforms from  Microsoft. Drawing heavily on technology from a couple of  Microsoft disciplines, Commerce Server 2000 takes advantage of open standards, customization and a highly scalable database engine. Priced at \$8,499 per CPU for an unlimited number of stores, Commerce Server 2000 is a solid package, and the use of Pipeline components makes business process customization easier.

Two years in the making and a step up from  Microsoft Site Server, Commerce Server 2000 runs on Windows 2000 Server or Advanced Server and requires an SQL 2000 server for its database support. Because it isn't bundled with Commerce Server, SQL 2000 will significantly add to the cost of deployment. Unlike WebSphere Commerce Server and AbleCommerce, Commerce Server 2000 works only with the IIS Web server. This is because of its heavy reliance on active server pages (ASP) and ActiveX and not so much on Java or Enterprise Java Beans.


Installation is similar to that of almost every other  Microsoft product-start Setup and follow the wizards. Setup prompts you for the server running your SQL database and automatically creates the necessary tables and stored procedures needed to maintain the site. Also, Commerce Server requires SQL authentication instead of Windows authentication for database security, so change your scheme accordingly if necessary.

You manage your site using a combination of tools. The Commerce Server Manager uses Microsoft Management Console snap-ins to provide quick and easy access to the major components of Commerce Server: SQL server, IIS administration, Event Viewer, Performance Monitor, System Monitor and Analysis Server.

Most of your time will be spent in the browser-based HTML application, Retail Business Desk. This is where you import catalogs, set up and maintain your products, and create categories to group your goods in. When creating a new store, you can import products from a comma-separated text file or through XML. Any errors that occur during the import process end up in the Event Log-not in a message window at the operator's PC. This can delay getting your catalog imported if the user does not have rights to view the Event Log.

Commerce Server has a powerful profiling system that lets you provide customized content to users as well as target advertising, discount and direct mail campaigns. For example, you can present "members only" pricing to registered users and a different level of pricing to nonmembers. This also lets you display items or products that may interest your users based on their profile and what they are browsing on your site. You can customize the profiling system to collect as much-or as little-information about your users as you want.

To keep track of your site's effectiveness, Commerce Server has a sophisticated analysis engine built into it. A number of reports are included with the system, and you also can create your own custom reports. The Commerce Server Data Warehouse, built on SQL Server, incorporates all available site data, including user profile data, product data, purchase history and campaign data. By using data mining, you can identify trends, and the prediction model helps determine cross-sell opportunities as customers browse your site. Commerce Server does not track browser and Web surfer session information. This is left to IIS's Web traffic log files and third-party log file analysis for Web traffic patterns.

Order processing is neat and efficient, if not as extensive as AbleCommerce's. With Commerce Server, you get standard credit card processing and purchase order support, but anything else requires a third party add-on, such as  CyberSource. You can, however, create shipping charges based on weight, subtotal or quantity, and tax rates based on country and state or province. Commerce Server is ready for international sales with support for multiple languages and currencies. Transactions are secured using SSL encryption to the browser.

Inventory control is virtually nonexistent. While you do get granular control over product details, groupings and catalogs, there is no facility in its default configuration for keeping track of inventory on hand or setting reorder points. This is something you would have to process using either a Pipeline connector or some other tool.

One of the most powerful features held over from Site Server is the Business Processing Pipelines System. Pipelines let you create and edit business process stages, such as shipping calculation. The Pipeline Editor is a graphical way of assembling new processes and integrating them into your system.

You can completely customize your site's look and feel by modifying just a couple of global .ASP files. By editing Layout1.ASP, you can easily define the page layout for the entire site. Another way of getting your site up quickly is by utilizing the Commerce Server Solution site. Here you can download canned e-commerce sites for both retail and supplier sites. These sites come with default settings, catalogs and merchandising that you can modify to meet your needs and shave weeks off of your initial installation.

WebSphere Commerce Server Suite

Bundled as a complete "out-of-the-box" solution, WebSphere Commerce Suite (WCS) is everything you need to get your e-store up and running. Based around four core components, WCS can handle both B2B and B2C relationships and uses open standards throughout. But as it's priced at \$45,000 per CPU, completeness has its price.

Like AbleCommerce, WCS works with a wide range of operating systems and Web server platforms, with one minor difference. While IBM lists Windows 2000 Server as a supported platform, it is not quite ready for prime time. WCS does work fine with AIX, Solaris and Windows NT 4.0 Server-our test platform operating system-but not Windows 2000. We initially tried to get WCS on a Windows 2000 Server, but gave up after trying for most of a day and reinstalled NT 4.0. Web server support is a short list of two engines-IBM HTTP Server (included) and Netscape iPlanet Web Server. No support is available for IIS.

To make sure that database scalability is never a concern with your e-store, IBM bundles DB2 Enterprise Edition with WCS. All data relating to the store, products, services and customer information is kept there. If you already have an Oracle database in place with your product and customer information, WCS can work with that, too. No other databases are supported.

Installation was much more involved than with any other product we reviewed. Once we switched back to Windows NT 4.0, trained IBM personnel took nearly three hours just to get the software installed. This included applying numerous hot fixes and manually editing a couple of configuration files. Installation, while described as "better than before," is still not for the faint of heart.

Initial configuration of your store is handled by the Configuration applet. This is where you set your basic store information, default languages, shipping charges and tax levels. WCS is by far the most multilingual e-commerce package in our roundup, supporting more than ten languages out of the box.

Getting your initial inventory in WCS is made a lot easier by way of the Mass Loader utility. Mass Loader helps you prepare and load your existing data into WCS using well-formed and valid XML. Once in, you can update inventory using the same tools or on an item-by-item basis using the Java-based WebSphere Commerce Suite Accelerator. This utility is where you will spend much of your time. In WCS Accelerator, you will find reporting, customer service and marketing modules, and as we saw above, merchandise modules.

As with Microsoft Commerce Server, you can create date- and customer-driven marketing campaigns. You can put some items on sale for a specific period of time or display them to buyers who meet a specific set of criteria. For example, you can create a campaign that discounts all winter merchandise after Feb. 1. You can also present product recommendations to buyers using "predictive" analysis tools, such as Macromedia's LikeMinds (bundled with the suite). LikeMinds uses collaborative filtering to provide personalized content based on buyers' profiles.

Order processing is one area where AbleCommerce offers a bit more. WCS can handle all major credit cards for online transactions, as well as CyberCash and SET. Support for additional payment methods is provided through the use of third-party cassettes. The WebSphere Payment Manager handles all of the site's payment functions and stores' access to specific payment types. As with all products, user- to-checkout data is secured by SSL encryption.

The WebSphere Commerce Analyzer module takes care of your data trend analysis by running predefined reports daily. Currently, you can view reports on campaign effectiveness as well as data by region and time of day. Coming in late 2001 with WebSphere Commerce Analyzer Advanced Edition, you will be able to create and build additional reports.

You can customize your site to meet your needs by modifying the core .JSP files that define the page layout and look. WCS comes with a small army of utilities to help you make your site attractive and exciting to look at. You get Hot Media, Page Designer, Perfect Photo, WebArt Designer, AnimatedGIF Designer and Applet Designer all in the standard package.

Keith Schultz is a contributing editor at InternetWeek and president of NetData Consulting Services Inc. You can reach him at kschultz@netdatacs.com.

—Win some, Lose Some

AbleCommerce 3.03

Hits

—Wizard-driven and easy to configure, with great support for multiple tax and shipping charges

Misses

—Can't import directly from an existing database; data analysis tools are lightweight; only one store in basic package

Microsoft Commerce Server 2000

Hits

—Extremely extensible through business process pipelines; great analysis through SQL server data mining

Misses

—Works only with IIS Web servers; manager's interface is a little unintuitive

WebSphere Commerce Suite

Hits

—Great multilingual support; excellent scalability; includes a host of tools

Misses

—Expensive; lacks high-end reporting tools; only one store in basic package

THE BOTTOM LINE

AbleCommerce is a low-cost package that gives up only a little ground to the "big boys"; overall, it's an excellent choice for anyone looking to get into e-commerce without spending the budget in one shot. Microsoft Commerce Server 2000's data analysis and product prediction modules are worth their weight in gold, and unless you prefer to run Web servers other than those built into Windows 2000 Server, it's a direct drop-in. Then there's WebSphere Commerce Suite, one of the most complete e-commerce packages we've seen. If it weren't for its less-than-stellar data analysis-and lofty price tag- choosing WebSphere would be a no-brainer.

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Microsoft Commerce Server 2000



Redmond, Wash.

425-882-8080

www.microsoft.com/commerceserver/productinfo/prodover.htm

PRICING

\$8,499 per processor

AbleCommerce 3.03

Able Solutions

Vancouver, Wash.

360-253-4142

www.ablecommerce.com

PRICING

\$2,995

WebSphere Commerce Suite Professional Developer Edition 5.1



Armonk, N.Y.

800-426-2255

www-4.ibm.com/software/webservers/commerce

PRICING

\$45,000 per processor

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HOW WE TESTED

Putting together our e-commerce lab test meant changing our thought processes from bits and bytes to shorts and sweaters. Instead of a tangle of CAT 5 cables and white-hot switches, we settled for big, burly servers and product-filled databases.

Our test bed was made up of three identically configured Compaq ProLiant servers (the ML370, DL530 and DL380). Factory installed with dual Intel Xeon 933-MHz CPUs, 10,000-rpm SCSI hard drives and 640 MB of RAM, our ProLiant servers were more than up to the task of handling our brick-to-click scenario. We installed each vendor's product along with the required database engines on a separate server, and tied it all together with an Extreme

Networks Summit4 Ethernet switch.

Beyond a certain baseline of response, performance is not as important as features and integration are for this product category. We focused on capabilities that could add to an e-business bottom line, rather than on generating tables of numbers that don't translate into increased sales or reduced costs. As technologists, we felt bad about not generating charts and graphs on how many bytes were needed to place an order. In the end, though, we felt it more important to provide information that matters when making a deployment decision.

Keith Schultz

To Host or Not to Host...

Once you've decided to hang your digital shingle, the next decision is where to host the site. You can let your ISP host it on its system, or you can foot the monthly bill and host the site yourself. Yet another option is to collocate a server with a Tier 1 or a Tier 2 provider. Which one is right for you?

The three options vary on cost, required expertise and control. For small to midsize businesses, where technical expertise and financial resources are in short supply, the best solution is to rent Web server space from your local ISP. Here's what to check before you jump headfirst into a solution.

If opting for an ISP, make sure the ISP has a stable system with some form of redundancy to the Internet, plus standby generators and clustered or fault-tolerant servers. Some ISPs will not be able to afford this level of service, so it's up to you to decide what you're willing to compromise when dealing with a smaller local company. The upside is that a local ISP may have a greater impact on how the site is implemented and maintained, and working through technical issues is easier when help is nearby.

The second option—setting up your own e-commerce server and hosting the site yourself—will work if you have the staff and pocketbook to handle it. Much like setting yourself up as an ISP, you will want to invest in high-quality, reliable servers; Internet connectivity through a very reliable provider; and trained technical support staff to manage the site 24x7.

The downside of hosting the site yourself is that you'll be footing the bill for the entire package—hardware, software and manpower. The upside, however, is that you maintain absolute control over the site and all local data traffic.

For systems with huge inventories or super-tight integration with your existing point-of-sale (POS) software, keeping everything local may be the best way to go. Just keep in mind that the site's uptime depends solely on you.

Third, collocating a server or servers with an upper-tier ISP will provide better performance by being "closer" to the backbone, plus more uptime because of link redundancy to the Internet by the ISP. Expect to pay a premium for this service—somewhere between the cost of doing it yourself and letting your ISP handle it for you.


With this option, note that you're still challenged geographically because the server is probably physically somewhere else. It may be more difficult for you to maintain your system and get real-time inventory access.

Connectivity issues aside, by locating your system at a Tier 1 or a Tier 2 provider, you get 24x7 monitoring and maintenance (depending on your service level agreement), and you can still call the server your own. You are master of your own domain (no pun intended) and can manage your server as you see fit.

Keith Schultz

Click To Websphere

Choosing this lab test's Best of Breed came down to a matter of out-of-the-box capabilities. All of the products will more than meet the needs of any size company that wants to get into e-commerce. None missed the boat in

any specific area-they all work. But  IBM squeaked out a narrow victory over runner-up Able Solutions.

When evaluating products for Best of Breed, we try to ignore the product's cost. The up-front cost of the software reviewed here is only one part of the overall start-up costs in getting an e-commerce site online. WebSphere Commerce Suite Professional Developer Edition may cost three times more than the other products, but in terms of the suite, it's a sweet deal.

You get not only full standards compliance but also a highly scalable database, super product catalog support, multilingual capabilities-second to none-and more development tools than you can shake a stick at. No product is perfect, and we've taken to task WCS's mediocre reporting and analysis support, but look for that to change in the near future.

Our runner-up isn't a big name in the software world, but Able Solutions has done just about everything right with AbleCommerce 3.03. It is one of the best suites we've had the pleasure of using, giving the entire site the "wizard" treatment. Once a few more of its add-on components are standard in the package, Able-Commerce will be hard to beat.

Microsoft Commerce Server 2000 missed the top spot simply because it lacked good inventory control. This product has by far the best data mining and analysis of the three products, but it needs better inventory control to truly rule.

Keith Schultz

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